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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,159	03/17/2004	George Popovich	CM05518H	4139

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EXAMINER

CHANG, JUNGWON

ART UNIT	PAPER NUMBER
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2154

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,159

Applicant(s)

POPOVICH ET AL.

Examiner

Jungwon Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-22 is/are rejected.
- 7) ☒ Claim(s) 10-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/17/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-22 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 14-17, 19 and 22 are rejected under 35 U.S.C. 102(b) as being as being anticipated by Jung (2002/0143993).

4. As to claims 14 and 22, Jung discloses the invention as claimed, including a registration method for use in a system (page 1, [0014]) having a hierarchical structure comprising a mobile node (10, figs. 1-4; page 1, [0007]), at least one foreign agent (20, figs. 1-4; page 1, [0008]), at least one gateway foreign agent (40, figs. 1-4; page 1, [0010]) and a home agent (30, figs. 1-4; page 1, [0009]), said method comprising the steps of:

receiving a registration request from a mobile node (figs. 1-2, 4-6), said registration request including a first care of address (IP address) in a care-of address entry of said registration request (203, fig. 2; registration request message transmitted

by the foreign agent includes an IP address of the foreign agent; page 1, [0014], lines 10+; page 2, [0016], lines 8-11; page 7, claim 8) and a second care of address (IP address of gateway foreign agent) added as an extension to said registration request (205, fig. 2; gateway foreign agent transmits the registration request message to a home agent along with its address; page 1, [0015], lines 11-14; page 7, claim 8);

allowing said mobile node registration (mobile node is registered in the home agent, the mobile node can exchange data with a host of the IP network; page 1, [0014], lines 35+; [0015]);

creating a registration entry for said mobile, which includes recoding said second care-of address for use in tunneling at least one datagram (packet) to said mobile node (regional tunnel management; page 1, [0001]; page 5, [0053]-[0055]); and

sending a registration reply to said mobile node (207-211, fig. 2).

5. As to claims 15 and 16, Jung discloses wherein said first care-of-address is the IP address of a foreign agent (203, fig. 2; registration request message transmitted by the foreign agent includes an IP address of the foreign agent; page 1, [0014], lines 10+; page 2, [0016], lines 8-11), which is included in a care-of address entry of said registration request, and said second care-of address is the IP address of a gateway foreign agent (gateway foreign agent stores an address of the foreign agent and then transmits the registration request message to a home agent along with its address; 205; fig. 2; page 1, [0015], lines 11-14).

6. As to claim 17, Jung discloses tunneling at least one datagram to said mobile node using said second care-of address when said second care-of address is available (regional tunnel management; page 1, [0001]; page 5, [0053]-[0055]), and tunneling said at least one datagram to said mobile node using said first care-of address when said second care-of address is unavailable (tunneling between mobile node and foreign agent which the mobile node belongs to; page 6, claims 2-3).

7. As to claim 19, Jung discloses receiving a subsequent registration message from said mobile node including a valid care-of address added as an extension to said subsequent registration request (803, fig. 8; page 5, [0053]); and recording said valid care-of address for use in tunneling at least one datagram to said mobile node (805, fig. 8; page 5, [0054]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-9, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jung (2002/0143993), in view of Borella (2004/0153525).

10. As to claims 1 and 21, they are rejected for the same reasons set forth in claims 14 and 22 above. In addition, Jung discloses intercepting a registration request from a mobile node to its home agent (figs. 1-2, 4-6), said registration request including a first care-of address for said mobile node (201, fig. 2; IP address of a foreign agent; page 2, [0016]);

determining whether there is an existing entry in a visitor list for said mobile node (determining whether there is a foreign agent having information on the mobile node; page 2, [0019], lines 8-32);

adding a second care-of address as an extension to said registration request (IP address of gateway foreign agent) and sending said registration request with said address extension to said home agent (205, fig. 2; gateway foreign agent transmits the registration request message to a home agent along with its address; page 1, [0015], lines 11-14; page 7, claim 8); and

sending a registration reply to said mobile node (207-211, fig. 2).

11. Jung discloses said entry exists (if there is a foreign agent having the information on the mobile; page 2, [0019], lines 21-32). However, Jung does not specifically disclose updating said entry; and if no entry exists, creating an entry in said list for the mobile node. Borella discloses updating said entry (fig. 10; if such a record already exists, updating the currently existing record associated with the mobile user; page 5, [0051], lines 1-7 and 11-12; page 10, [0086]; page 11, [0087]); and if no entry exists, creating an entry in said list for the mobile node (fig. 10; if no record exists for the

mobile node, creating a new mobile node profile record; page 5, [0051], lines 1-7 and 8-10; page 10, [0086]; page 11, [0087]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Jung and Borella because Borella's updating and creating entries would allow keep track of mobile communications information (Borella; page 1, [0006]).

12. As to claims 2 and 7, Jung discloses wherein said first care-of-address is the IP address of a foreign agent (203, fig. 2; registration request message transmitted by the foreign agent includes an IP address of the foreign agent; page 1, [0014], lines 10+; page 2, [0016], lines 8-11), which is included in a care-of address entry of said registration request, and said second care-of address is the IP address of a gateway foreign agent (gateway foreign agent stores an address of the foreign agent and then transmits the registration request message to a home agent along with its address; 205, fig. 2; page 1, [0015], lines 11-14).

13. As to claim 3, Jung discloses wherein said foreign agent selects said gateway foreign agent, and relays said registration request from said mobile node to said gateway foreign agent (figs. 2-7).

14. As to claim 4, it is rejected for the same reasons set forth in claim 1 above. In addition, Jung discloses wherein said registration reply is sent directly to said mobile node from a gateway foreign agent if said entry exists (509, fig. 5), and said reply is

received from said home agent (507, fig. 5) and replayed from the home agent to the mobile node via a gateway foreign (fig. 5; page 5, [0044]).

15. As to claims 5, 6 and 9, Jung does not specifically disclose storing/maintaining a lifetime value, determining whether a lifetime for said registration request has expired. However, Borella discloses storing/ maintaining a lifetime value, determining whether a lifetime for said registration request has expired (Table 6; page 5, [0050]; page 10, [0083]-[0084]; page 13, [0105]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Jung and Borella because Borella's lifetime value would efficiently perform the mobile node to re-register with a foreign agent when the lifetime value is expired.

16. As to claim 8, Jung further discloses said mobile node roaming from a first foreign agent to a second foreign agent (mobile node moves from the original foreign agent to another foreign agent; page 2, [0017]), wherein said first care of address is the IP address of said second foreign agent (203, fig. 2; registration request message transmitted by the foreign agent includes an IP address of the foreign agent; page 1, [0014], lines 10+; page 2, [0016], lines 8-11; page 7, claim 8).

17. As to claim 18, Jung does not specifically disclose removing said second care-of address from said registration entry if said second care-of address is unavailable. However, Borella discloses removing said second care-of address from said registration

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entry if said second care-of address is unavailable (page 7, [0058]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Jung and Borella because Borella's deleting address would allow keep track of mobile communications information (Borella; page 1, [0006]).

18. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jung (2002/0143993), in view of O'Neill (2003/0223439).

19. As to claims 13 and 20, Jung discloses wherein said first care-of address is an IP address (203, fig. 2; registration request message transmitted by the foreign agent includes an IP address of the foreign agent; page 1, [0014], lines 10+; page 2, [0016], lines 8-11; page 7, claim 8), and said second care-of address is the IP address of a gateway foreign agent (gateway foreign agent transmits the registration request message to a home agent along with its address; 205; fig. 2; page 1, [0015], lines 11-14; page 7, claim 8). However, Jung does not specifically use a word "co-located care-of address". O'Neill discloses said first care-of address is a co-located care-of address (page 1, [0003]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Jung and O'Neill because O'Neill's co-located care-of address would allow the mobile node to enable to connect to external network while in the foreign network.

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20. Claims 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

O'Neill, 2004/0047348, Takeda et al, 2004/0105420, Shimizu et al, 2002/0045450 disclose a method and system for binding update message between a home address of the mobile node and a care of address CoA.

Omar et al, "An Integrated Platform for Reliable Multicast Support in the Regional Mobile-IP Environment", Mobile Computing and Communications Review, Vol. 6, Number 2, April 2002.

Campbell et al, "Comparison of IP Micromobility Protocols", IEEE, 2002.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jungwon Chang whose telephone number is 571-272-3960. The examiner can normally be reached on 9:30-6:00 (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on 571-272-3964. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "JWC", is written above the typed name.

JWC
April 14, 2005